FIG.1

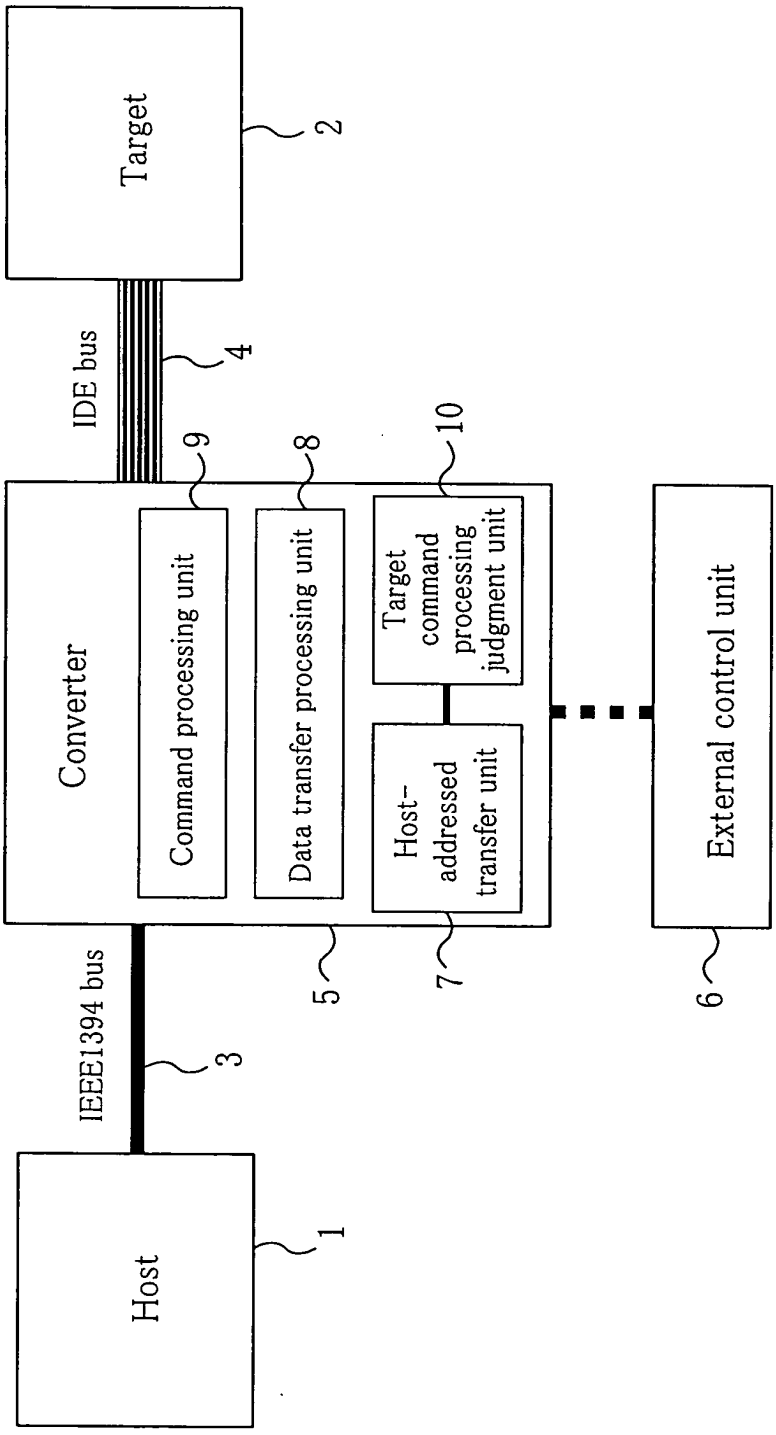
Target
2
IDE bus
4
9
8
10
Converter
Command processing unit
Data transfer processing unit
Target command processing judgment unit
Host-addressed transfer unit
External control unit
IEEE1394 bus
3
5
7
6
Host
1

FIG.2

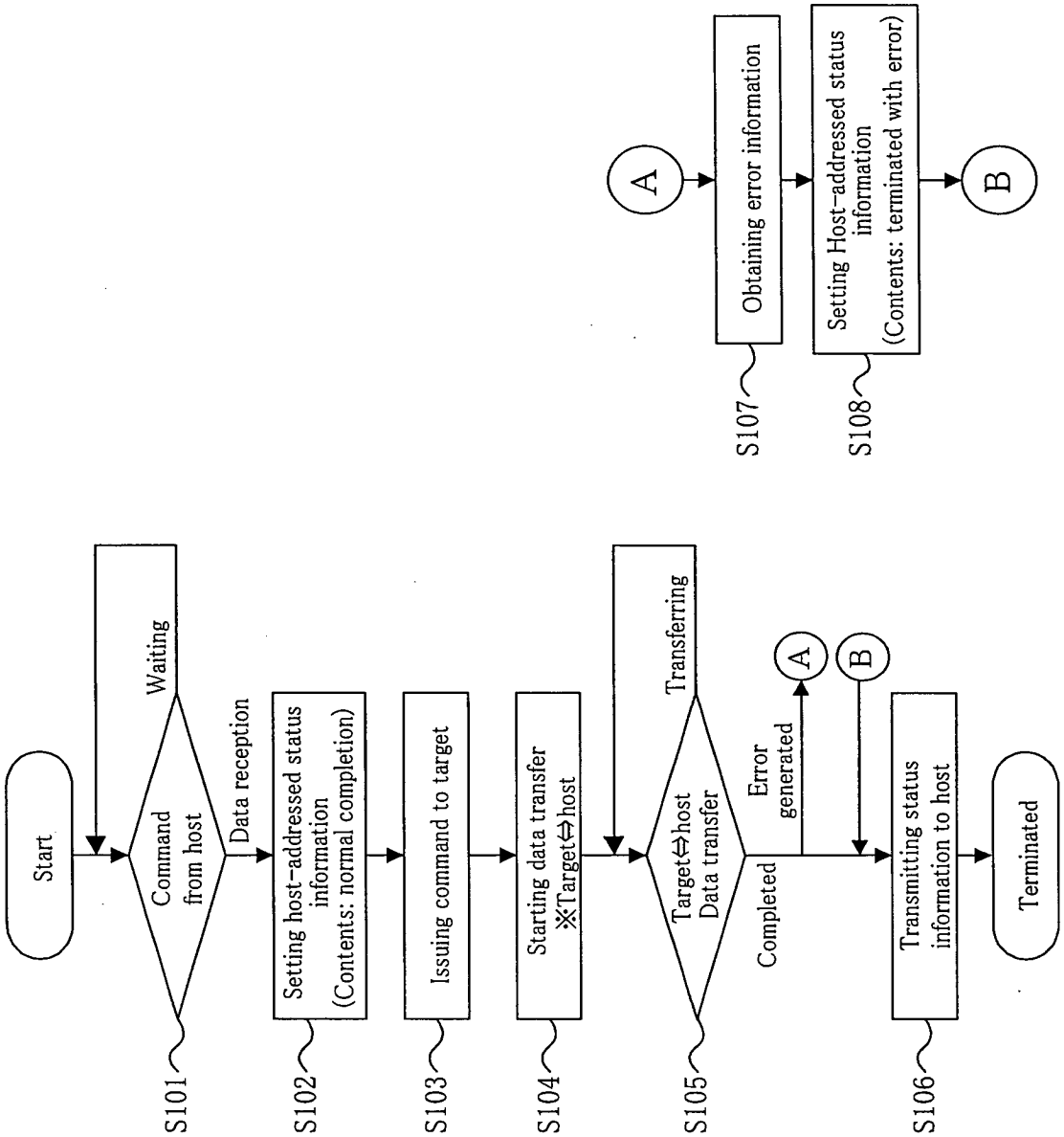
Start
Command from host
Waiting
Data reception
S101
Setting host-addressed status information (Contents: normal completion)
S102
Issuing command to target
S103
Starting data transfer ※Target⇔host
S104
Target⇔host Data transfer
Transferring
S105
Completed
Error generated
A
B
Transmitting status information to host
S106
Terminated
A
Obtaining error information
S107
Setting Host-addressed status information (Contents: terminated with error)
S108
B

FIG.3

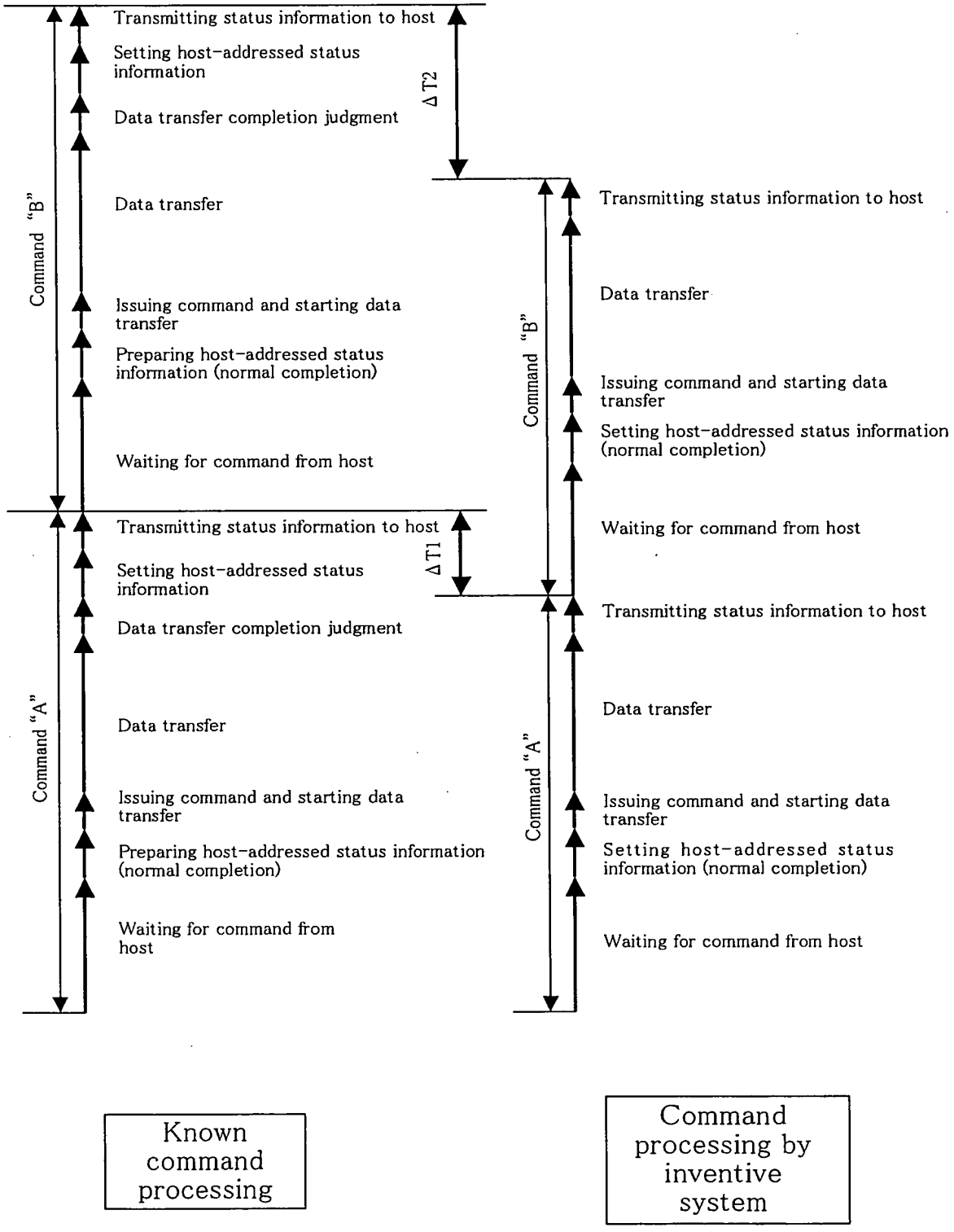
Transmitting status information to host
Setting host-addressed status information
Data transfer completion judgment
Data transfer
Issuing command and starting data transfer
Preparing host-addressed status information (normal completion)
Waiting for command from host
Command "B"
Transmitting status information to host
Setting host-addressed status information
Data transfer completion judgment
Data transfer
Issuing command and starting data transfer
Preparing host-addressed status information (normal completion)
Waiting for command from host
Command "A"
ΔT1
ΔT2
Transmitting status information to host
Data transfer
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Waiting for command from host
Command "B"
Transmitting status information to host
Data transfer
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Waiting for command from host
Command "A"
Known command processing
Command processing by inventive system

FIG.4

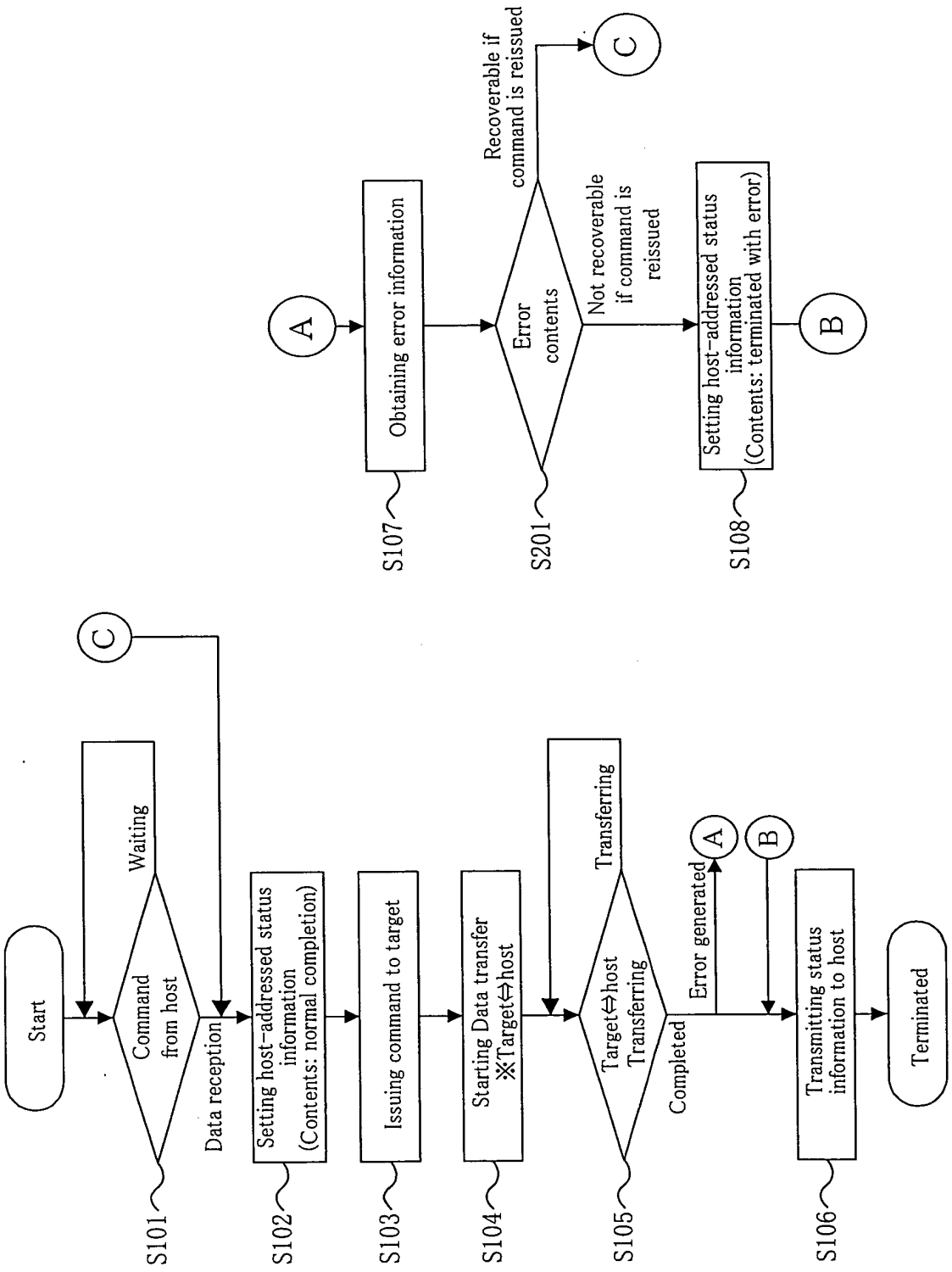
Start
Command from host
Waiting
Data reception
S101
C
Setting host-addressed status information (Contents: normal completion)
S102
Issuing command to target
S103
Starting Data transfer ※Target⇔host
S104
Target⇔host Transferring
Transferring
S105
Completed
Error generated
A
B
Transmitting status information to host
S106
Terminated
A
Obtaining error information
S107
Error contents
S201
Recoverable if command is reissued
C
Not recoverable if command is reissued
Setting host-addressed status information (Contents: terminated with error)
S108
B

FIG.5

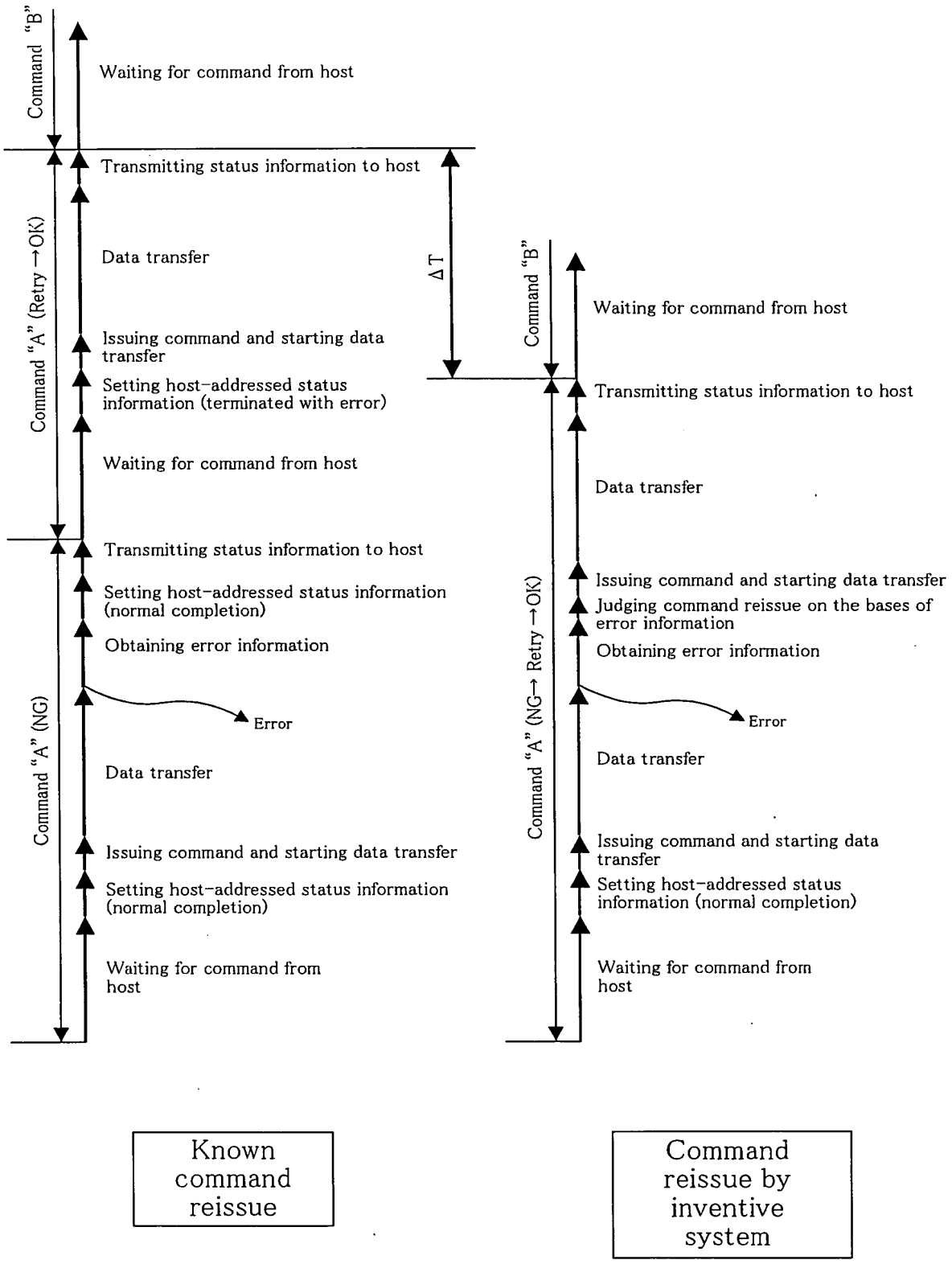
Command "B"
Waiting for command from host
Transmitting status information to host
Data transfer
Command "A" (Retry → OK)
Issuing command and starting data transfer
Setting host-addressed status information (terminated with error)
Waiting for command from host
Transmitting status information to host
Setting host-addressed status information (normal completion)
Obtaining error information
Error
Command "A" (NG)
Data transfer
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Waiting for command from host
ΔT
Command "B"
Waiting for command from host
Transmitting status information to host
Data transfer
Command "A" (NG→ Retry → OK)
Issuing command and starting data transfer
Judging command reissue on the bases of error information
Obtaining error information
Error
Data transfer
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Waiting for command from host
Known command reissue
Command reissue by inventive system

FIG.6

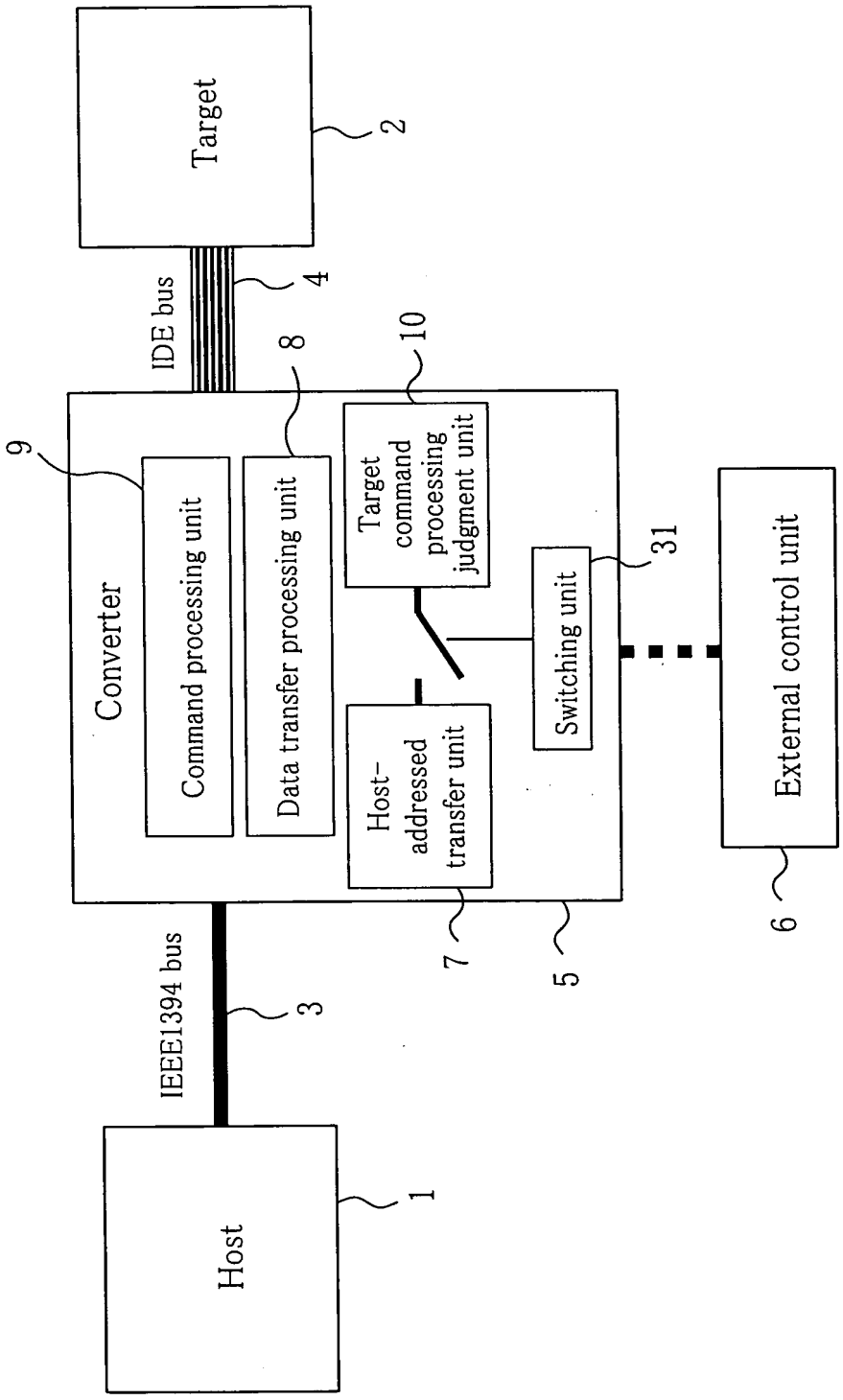
Target
2
IDE bus
4
8
10
9
Converter
Command processing unit
Data transfer processing unit
Target command processing judgment unit
Switching unit
31
Host-addressed transfer unit
External control unit
6
7
5
IEEE1394 bus
3
Host
1

FIG.7

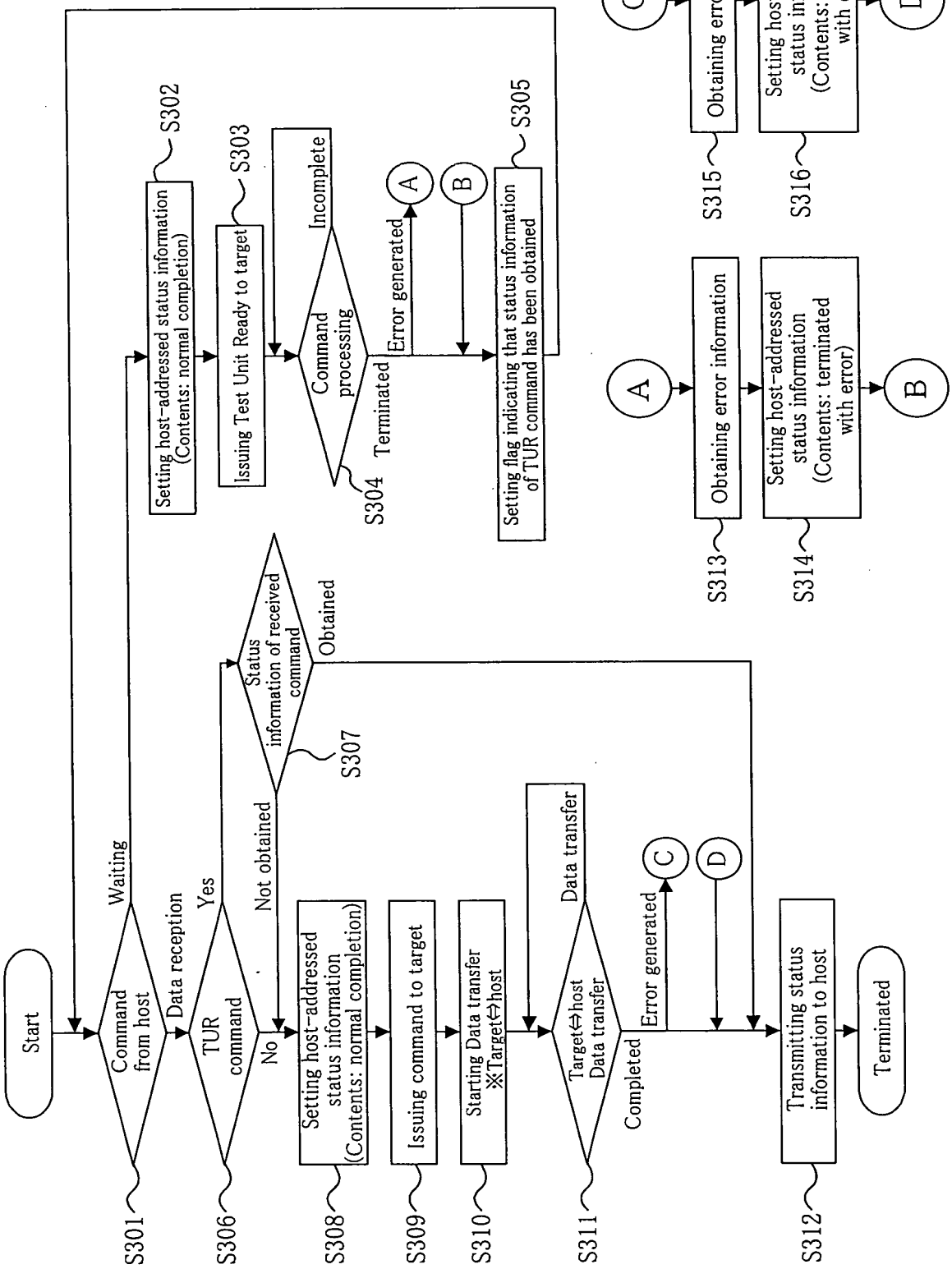
Start
Command from host
Waiting
Data reception
S301
TUR command
Yes
No
S306
Status information of received command
Obtained
Not obtained
S307
Setting host-addressed status information (Contents: normal completion)
S308
Issuing command to target
S309
Starting Data transfer ※Target⇔host
S310
Target⇔host Data transfer
S311
Completed
Error generated
C
D
Transmitting status information to host
S312
Terminated
Setting host-addressed status information (Contents: normal completion)
S302
Issuing Test Unit Ready to target
S303
Command processing
Incomplete
Terminated
S304
Error generated
A
B
Setting flag indicating that status information of TUR command has been obtained
S305
A
Obtaining error information
S313
Setting host-addressed status information (Contents: terminated with error)
S314
B
C
Obtaining error information
S315
Setting host-addressed status information (Contents: terminated with error)
S316
D

FIG.8

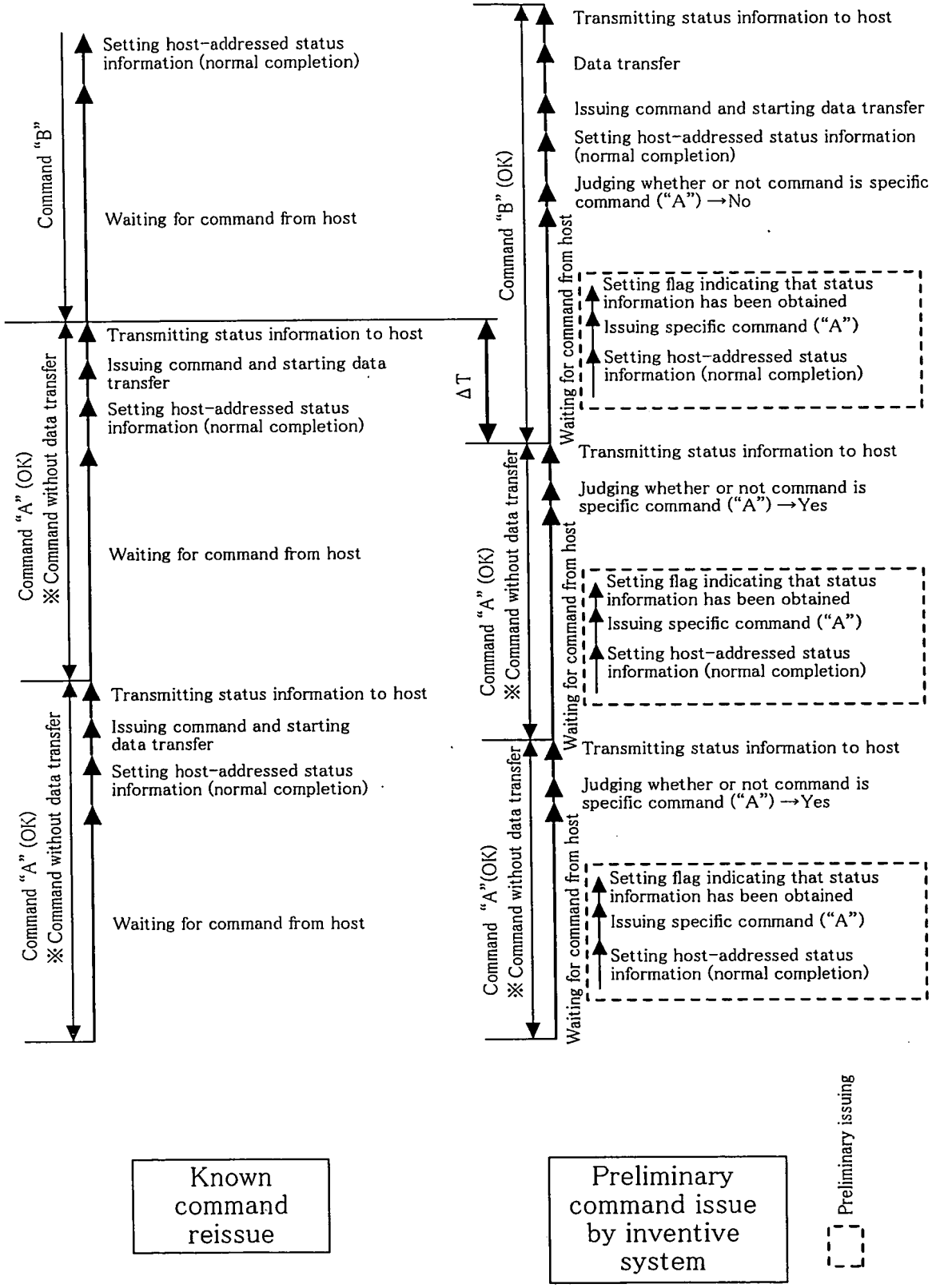
Command "B"
Setting host-addressed status information (normal completion)
Waiting for command from host
Command "A" (OK)
※Command without data transfer
Transmitting status information to host
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Waiting for command from host
Command "A" (OK)
※Command without data transfer
Transmitting status information to host
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Waiting for command from host
ΔT
Command "B" (OK)
Transmitting status information to host
Data transfer
Issuing command and starting data transfer
Setting host-addressed status information (normal completion)
Judging whether or not command is specific command ("A") →No
Waiting for command from host
Setting flag indicating that status information has been obtained
Issuing specific command ("A")
Setting host-addressed status information (normal completion)
Command "A" (OK)
※Command without data transfer
Transmitting status information to host
Judging whether or not command is specific command ("A") →Yes
Waiting for command from host
Setting flag indicating that status information has been obtained
Issuing specific command ("A")
Setting host-addressed status information (normal completion)
Command "A"(OK)
※Command without data transfer
Transmitting status information to host
Judging whether or not command is specific command ("A") →Yes
Waiting for command from host
Setting flag indicating that status information has been obtained
Issuing specific command ("A")
Setting host-addressed status information (normal completion)
Known command reissue
Preliminary command issue by inventive system
Preliminary issuing

FIG.9
PRIOR ART

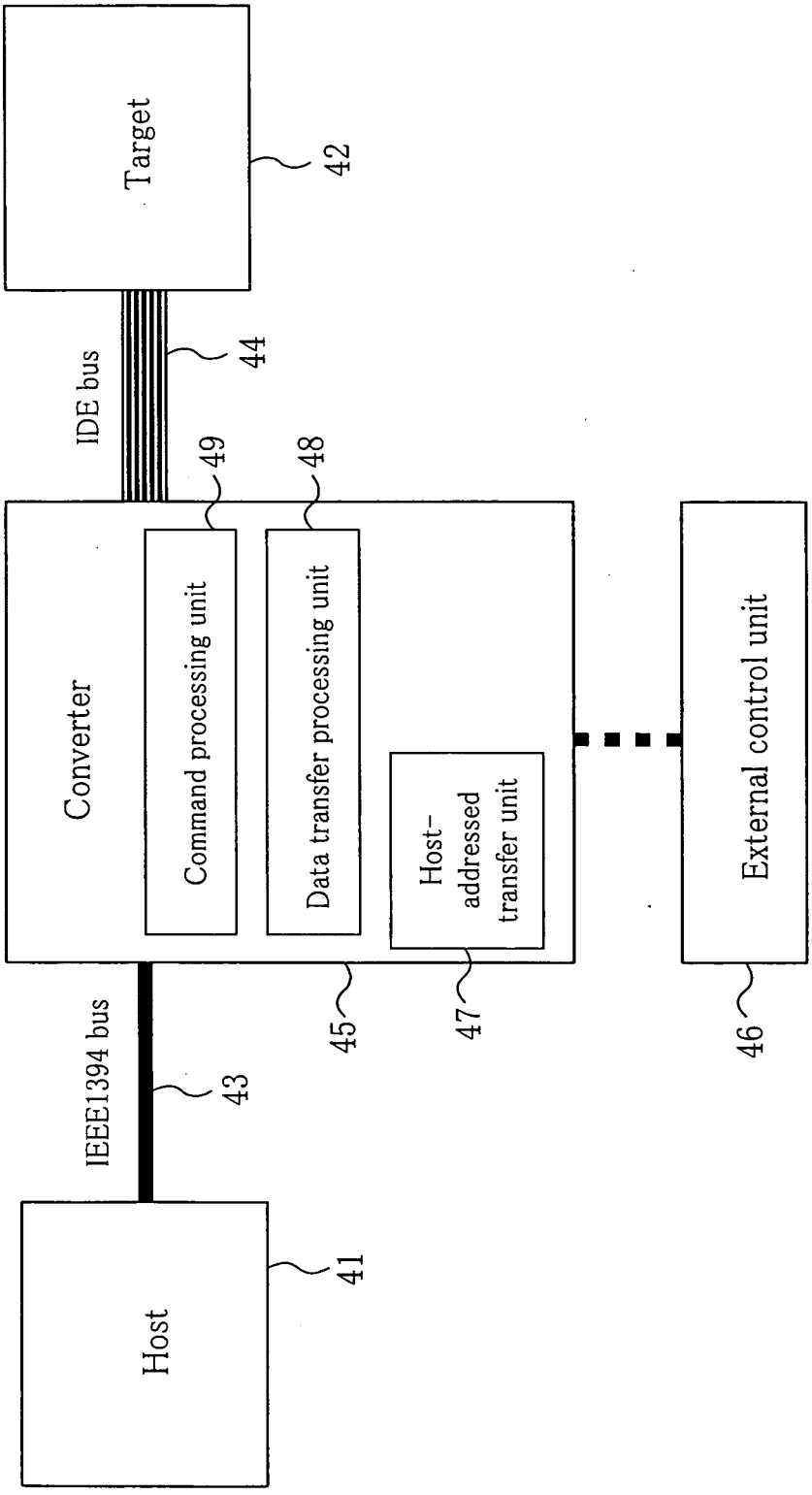
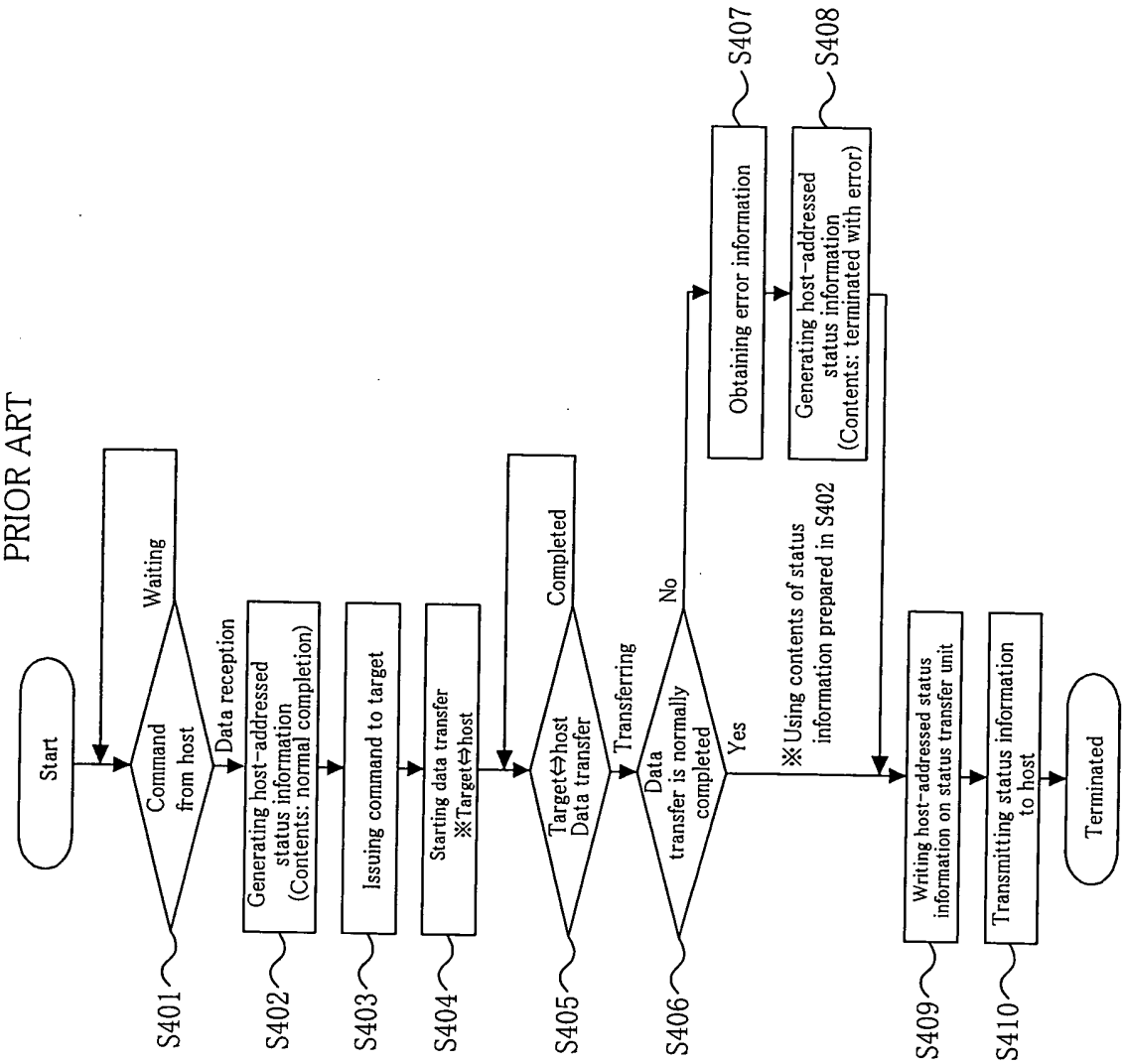
FIG.10
PRIOR ART